

SOP #12: Data Entry (continued).

Landbird Monitoring Protocol for Klamath Network Parks

Standard Operating Procedure (SOP) #12: Data Entry

Version 1.0

Revision History Log:

Previous Version	Revision Date	Author	Changes Made	Reason for Change	New Version

This SOP explains the procedures for entering point count, species checklist, area search, banding, and vegetation data into their respective databases.

Introduction

Data entry is a critical component of field studies that must be addressed to ensure the data collected are of good quality. This SOP provides details of how to complete data entry in the project databases, which include banding, area search, point count, species checklist, and vegetation data. Each database was developed in Access 2000 and utilizes lookup tables and electronic forms that mimic the hardcopy datasheets to reduce transcription errors and allow for easy data entry. Data dictionaries for each database are provided at the end of this SOP. Once data entry is completed, data are exported into flat .dbf files for further data verification and validation (SOP #13: Data Validation and Verification). Once quality control processes have been implemented, all field databases are uploaded into a master database that conforms to the NPS Natural Resource Database Template (NRDT).

Timelines and Responsibilities

Technicians and interns are responsible for completing the first two rounds of data validation (SOP #13: Data Validation and Verification) and data entry. Data should be entered as quickly as possible following data collection. Ideally, data are entered within 2 weeks of data collection and should be entered no later than 1 month after the field effort.

Organizing Your Data Entry System

The first step is to get the data entry system organized on your computer. Create a folder called “Data Entry” on your C drive. Obtain a CD containing the five blank monitoring Access databases from the Project Lead. Each of the entry databases is named with six digits. The first two represent the type of survey (VR = variable radius point counts, VG = vegetation, AS = area

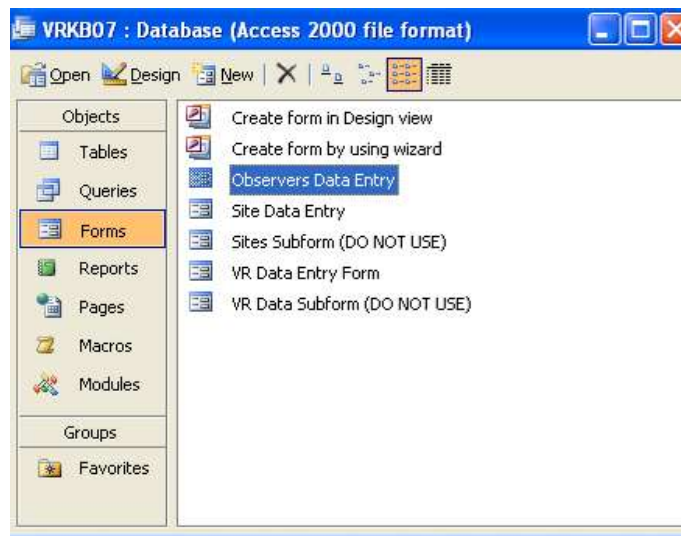
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search, SC = species checklist, BD = banding). The next two digits are for the initials of the person entering the data or initials representing your field station if more than one person will enter data into the database. The last two digits represent the year during which data are collected. Each of these data sets is found within its own folder that is named using this same convention.

Data Entry

Procedures

1. To begin entering data, navigate to the proper database and double-click to open the Access file.
2. On the left side of the database window is an index column named “Objects.” Within this column, click on “Forms.” On the right side, at the bottom of the list, double-click on the Data Entry Form.



3. Begin to enter the data and be sure to use the “Enter” key to advance to the next field; continuing past the last field will advance you to the next form. You must complete the form and proceed to the next form so the data can be saved. The databases have been designed to not save data until the form is complete. Access will automatically save the data as each form is completed; you do not need to use the save function.
4. As you continue to enter data in the form, you can toggle back and forth from previous forms if necessary (e.g., if you have forgotten which record was last entered). On the bottom of the Data Entry Form, you will find the word "Record:" followed by buttons with arrows and a field containing a record number; click on the button with an arrow to toggle through the records and the arrow with the asterisk to get to the first blank record of the file.

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5. As data are being entered, the person entering the data should visually review each data form to make sure that the data on screen match the field forms. This should be done by toggling through the records after the completion of each page.

Basic Guidelines

1. Enter all data in capital letters, using the “Caps Lock” function on the keyboard. This is important because Access will automatically convert lowercase to uppercase, but when the data are exported, they revert to lowercase.
2. Enter all data exactly as they appear on the field form (for example, station numbers are two characters 01, 02, 03, and must be entered as such with the 0 preceding single digits).
3. If data on a field form have been edited with a red pencil, enter the datum that is written in red.
4. You must be familiar enough with the Data Entry Form to know which fields are permitted to be blank. If you are not certain, review this with the Project Lead prior to data entry. Some fields are intentionally left blank and should be left blank during data entry. Alternately, when a field is left blank by the observer that actually required data, enter -9 in that entry field. This value is used because -9 would not be an acceptable data value for any field. An example of when to enter -9 is if a required field such as weight on the banding field form was left blank because the bird escaped before it could be weighed.
5. If there are data on the form that the database will not allow, then enter -8 and make a note on your data entry log, including the value that you tried to enter. This is a rare situation. An example would be if a new non-bird species is detected on a point count route and the species has not been incorporated into the validation program. The -8 will bring this to the attention of the Project Lead who will revise the validation text prior to the next field season.
6. When entering data, try to leave enough time to complete a block of data (e.g., a point count route or a page of banding data). Do not partially enter a point count route or banding data page.
7. Write your initials and the date on the bottom of the field form following the ENT field.
8. If you have any questions about how to enter data, ask the Project Lead for clarification immediately.

Exporting Data

Data backups should be completed every day that new data are entered. Backups are created to save time in case of mistakes or database file corruption. Pre-designed queries are used to create backups in a Dbase IV format to reduce the amount of space needed for storage. Follow these steps to create backups of the data at the end of the day:

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1. Close the data entry form.
2. Change to the Query section of the database. On the left side of the window in the Access database is a column named "Objects;" click on "Query" in that column.
3. Select and double-click the pre-formatted query. The query title will include the first two letter code that indicates data type (e.g., VR in the point count database).



4. Export the data to a dBase file from the Query:
 - a. Under the "File" drag-down menu, select "Export."
 - b. The file should already be named appropriately (e.g., VRKB07). If it is not, change it. Under "save as type," select "dBase IV."
 - c. Save it in your data folder. At the top, "Save in," select drive "C:," "Data Entry," and then your specific folder (e.g., VRKB07).
 - d. If prompted, select "Yes" to replace the existing file.
5. Make a backup of this file on your hard drive:
 - a. In File Manager, find the file.
 - b. Click it once to select it and press Ctrl + C to copy it.
 - c. Press Ctrl + V to paste it.
 - d. Right click the "Copy of" and select "Rename."
 - e. Delete the words "Copy of" and add the date to the end of the file name, so that it looks like "VRKB07 20071021." If you have made multiple saves in one day, you can number these alphabetically (i.e., VRKB07 20071021a and VRKB07 20071021b, etc.).
6. Transfer the complete database and all backup files to the Project Lead, using a CD or flash drive.

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Maintaining the Data Entry Log

A data entry log must be maintained during data entry. A blank data entry log is included at the end of this SOP. Each data entry log should be specific to a single dataset. At the top of the data entry log, record the name of the data entry file and the names of all individuals entering data who are using the file. During each data entry session, record the date, your initials, what data was entered (e.g., point count route name and number of stations, band size and string number, total number of records at end of data entry session, number of hours spent entering data, and the name of the exported backup file). In addition, record any comments. Comments should include the reason that -8 was entered for data that did not conform to the database or unresolved edit needs (SOP #13: Data Validation and Verification).

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Data Entry Log

Data File: _____ Data Enterers' Names: _____

Init.	Date	Backup File	Project	Route and # of Stations or Band Size and Range of Band #s ¹	# of Pgs or Rec ²	# of Hrs ³	Comments (continue on next line if necessary)

1. For point count, area search, and vegetation data, record route name and number of stations; for species checklist, record only route name. For banding data, record the band size and the range of band numbers. If entering unbanded or hummingbird data, enter "unbanded" and the date of the first record on the page. If entering *Empidonax* data, enter the date and band number of the first record on the page.
2. Pages should be recorded for point counts, area search, and vegetation data. Number of records should be recorded for banding data.
3. Record the number of hours spent entering data at the end of a data entry session (not by route or page).

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KBO Data Dictionaries

Dataset: ASXXYY

File Type: mdb

Relationship: Area Search Header (one) to Area Search Data (many)

Table: Area Search Header

Field Name	Field	Required (Y/N)	Type	Length	Decimal	Definition	Enumerated Domain	Range Domain
RecNum	1	Y	Numeric	Integer	0	Auto Number based on order of entry; Key Field		Integer starting at 1, no limit
Project	2	Y	Character	20		Project or Region Code		
Site	3	Y	Character	20		Site name (often 4-letter code)	Each 4-letter code represents itself	
Point	4	Y	Character	2		Point (Search area)	Typically designated A or B	
Month	5	Y	Character	2		Month		01 to 12
Day	6	Y	Character	2		Day		01 to 31
Year	7	Y	Character	4		Year		
PrimObs	8	Y	Character	4		Primary observer's initials		
SecObs	9	N	Character	20		Secondary observer's initials, if multiple observers, initials separated by “,”		
Temp	10	Y	Character	3		Temperature		Degrees Celsius, range=-10 to 40
CldCvr	11	Y	Character	3		Cloud Cover		Percentage, range=0 to 100%
Precip	12	Y	Character	2		Precipitation Type	N=None, F=Fog, M=Mist, D=Drizzle, R=Rain	

SOP #12: Data Entry (continued).

Field Name	Field	Required (Y/N)	Type	Length	Decimal	Definition	Enumerated Domain	Range Domain
Wind	13	Y	Character	2		Wind Strength	Beaufort Scale, 0=calm, 1=light air, 2=leaves rustle, 3=small branches sway, 4=moderate breeze, >4 do not survey	
StrtTime	14	Y	Character	4		Start Time: 24-hour		0000 to 2359
Duration	15	Y	Numeric	Integer	0	Duration of survey		Minutes (default=20)
Notes	16	N	Character	255		Notes		

Table: Area Search Data

Field Name	Field	Required (Y/N)	Type	Length	Decimal	Definition	Enumerated Domain	Range Domain
RecNum	1	Y	Numeric	Long Integer		Auto Number based on order of entry		Integer starting at 1, no limit
Species	2	Y	Character	4		AOU 4-letter bird species code	See Table: Bird List Lookup	
Detect	3	Y	Character	2		Detection Type	V=Visual, S=Song, C=Call, D=Drumming, W=Wing, F=Flyover	
Total	4	Y	Numeric	Long Integer	0	Total detections		>0
Area	5	Y	Character	3		Detection occurred on or off survey area	On, Off	

SOP #12: Data Entry (continued).

Field Name	Field	Required (Y/N)	Type	Length	Decimal	Definition	Enumerated Domain	Range Domain
Breeding	6	Y	Character	2		Breeding Status	C=Courtship or copulation, D=distracted, F=carrying food or fecal sac, L=local young, M, Carrying nest material, N=Active nest, S=Song, T=Territorial behavior	

Dataset: VRXXYY

File Type: mdb

Relationship: VCP Header (one) to VCP Data (many)

Table: VCP Header

Field Name	Field	Required (Y/N)	Type	Length	Decimal	Definition	Enumerated Domain	Range Domain
RecNum	1	Y	Numeric	Integer	0	Auto Number based on order of entry; Key Field		Integer starting at 1, no limit
Project	2	Y	Character	20		Project or Region Code		
Site	3	Y	Character	20		Site name (often 4-letter code)	Each 4-letter code represents itself	
Month	4	Y	Character	2		Month		01 to 12
Day	5	Y	Character	2		Day		01 to 31
Year	6	Y	Character	4		Year		
PrimObs	7	Y	Character	4		Primary observer's initials		
Temp	8	Y	Character	3		Temperature		Degrees Celsius, range=-10 to 40
CldCvr	9	Y	Character	3		Cloud Cover		Percentage, range=0 to 100%

SOP #12: Data Entry (continued).

Field Name	Field	Required (Y/N)	Type	Length	Decimal	Definition	Enumerated Domain	Range Domain
Precip	10	Y	Character	2		Precipitation Type	N=None, F=Fog, M=Mist, D=Drizzle, R=Rain	
Wind	11	Y	Character	2		Wind Strength	Beaufort Scale, 0=calm, 1=light air, 2=leaves rustle, 3=small branches sway, 4=moderate breeze, >4 do not survey	
Notes	12	N	Character	255		Notes		

Table: VCP Data

Field Name	Field	Required (Y/N)	Type	Length	Decimal	Definition	Enumerated Domain	Range Domain
RecNum	1	Y	Numeric	Long Integer		Auto Number based on order of entry		Integer starting at 1, no limit
Point	2	Y	Character	3		Reference number for each point count point within a site (route)		
Noise	3	Y	Character	2		Noise level during point count census	1=No noise, 2=Moderate noise, 3=Too much noise, do not survey	
Time	4	Y	Character	4		Time of point count (24-hour)		0000 to 2359
Species	5	Y	Character	4		AOU 4-letter bird species code	See Table: Bird List Lookup	

SOP #12: Data Entry (continued).

Field Name	Field	Required (Y/N)	Type	Length	Decimal	Definition	Enumerated Domain	Range Domain
Distance	6	Y	Numeric	Long Integer	0	Distance to bird from point		Meters, to nearest meter, range=0 to 9999
Detect	7	Y	Character	2		Detection Type	V=Visual, S=Song, C=Call, D=Drumming, W=Wing, F=Flyover	
NumDet	8	Y	Numeric	Long Integer	0	Number of Detections		
DLoc	9	Y	Character	2	0	Detection Location	R=Riparian, U=Upland	
Previous	10	Y	Character	2		Previous detection	P=Previous	
Breeding	11	Y	Character	2		Breeding Status	C=Courtship or copulation, D=distracted, F=carrying food or fecal sac, L=local young, M, Carrying nest material, N=Active nest, S=Song, T=Territorial behavior	

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Dataset: SCXXYY

File Type: mdb

Relationship: Species Checklist Header (one) to Species Checklist Data (many)

Table: Species Checklist Header

Field Name	Field	Required (Y/N)	Type	Length	Decimal	Definition	Enumerated Domain	Range Domain
RecNum	1	Y	Numeric	Integer	0	Auto Number based on order of entry; Key Field		Integer starting at 1, no limit
Project	2	Y	Character	20		Project or Region Code		
Site	3	Y	Character	20		Site name (often 4-letter code)	Each 4-letter code represents itself	
Month	4	Y	Character	2		Month		01 to 12
Day	5	Y	Character	2		Day		01 to 31
Year	6	Y	Character	4		Year		
PrimObs	7	Y	Character	4		Primary observer's initials		
SecObs	8	N	Character	20		Secondary observer's initials, if multiple observers, initials separated by “,”		
NumObs	9	Y	Numeric	Integer		Number of observers		Integer
SurvType	10	Y	Character	3		Survey Type	AQ=Aquatic, AS=Area Search, BT=Black Tern, BW=Bird Walk, CES=Constant Effort Station, DEM=Banding Demo, NS=Nest Search, O=Other, PC=Point Count, ROI=Rapid Ornithological Inventory, T=Travel	
StrtTime	11	Y	Character	4		Start Time: 24-hour		0000 to 2359
EndTime	12	Y	Character	4		End Time: 24-hour		0000 to 2359
Notes	13	N	Character	255		Notes		

SOP #12: Data Entry (continued).

Table: Species Checklist Data

Field Name	Field	Required (Y/N)	Type	Length	Decimal	Definition	Enumerated Domain	Range Domain
RecNum	1	Y	Numeric	Long Integer		Auto Number based on order of entry		Integer starting at 1, no limit
Species	2	Y	Character	4		AOU 4-letter bird species code	See Table: Bird List Lookup	
Breeding	3	Y	Character	2		Breeding Status	B=Bird captured C=Courtship or copulation, D=distracted, E=Encountered, F=carrying food or fecal sac, L=local young, M, Carrying nest material, N=Active nest, O=Flyover, S=Song, T=Territorial behavior	

Dataset: BDXXYY

File Type: mdb

Table: Banding Data

Field Name	Field	Required (Y/N)	Type	Length	Decimal	Definition	Enumerated Domain	Range Domain
RecNum	2	Y	Numeric	Integer	0	Auto Number based on order of entry; Key Field		Integer starting at 1, no limit
Year	6	Y	Character	4		Year		
BandSize	2	Y	Character	2		Band Size	HH, 0A, 00, 1C, 01, 1B, 1A, 1P, 02, 03, 3A, 3B, 04, 4A, 05, 06, 7A, 7B, 7D, 08, 09, 9C, RR, UU	
Recorder	3	Y	Character	4		Recorder's initials		

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Field Name	Field	Required (Y/N)	Type	Length	Decimal	Definition	Enumerated Domain	Range Domain
Bander	4	Y	Character	4		Bander's initials		
BandCode	5	Y	Character	2		Band Status Code	C=Changed band, D=Destroyed band, L=Lost band, N=New band, R=Recapture, U=Unbanded	
BandNo	6	Y	Character	9		Band Number		
Species	7	Y	Character	4		AOU 4-letter bird species code	See Table: Bird List Lookup	
Age	8	Y	Character	2		Age	A=After hatch year, H=Hatch year, L=Local, O=After second year, S=Second year, T=Third year, U=Unknown, V=After third year	

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Field Name	Field	Required (Y/N)	Type	Length	Decimal	Definition	Enumerated Domain	Range Domain
HowAged1	9	Y	Character	2		How Aged	#=Growth bar alignment, @ Egg in oviduct, = Fault bar alignment, 0 = No molt limits, A=Definitive alternate plumage, B=Brood Patch, C=Cloacal protuberance, D=Primary covert shape or wear, E=Eye color, F=Feet or legs, G=Gape, H=First basic plumage, I=Mouth or bill, J=Juvenal plumage, K=Adult basic plumage, L=Plumage color length, M=Molt limits, N=First alternate plumage, O=Other, P=Plumage, Q=Measurements, R=Prejuvenal molt, S=Skull ossification, T=Feather texture, U=Undetermined, V=Feather shape, W=Differential feather wear, X=Age or sex undetermined, Y=Symmetrical flight feather molt, Z=Less precise age	
HowAged2	10	Y	Character	2		How Aged	Same as above	
Sex	11	Y	Character	2		Sex	M=Male, F=Female, U=Unknown	
HowSex1	12	Y	Character	2		How Sexed	@ Egg in oviduct, B=Brood Patch, C=Cloacal protuberance, E=Eye color, O=Other, P=Plumage, Q=Measurements	
HowSex1	12	Y	Character	2		How Sexed	Same as above	

SOP #12: Data Entry (continued).

Field Name	Field	Required (Y/N)	Type	Length	Decimal	Definition	Enumerated Domain	Range Domain
Skull	13	Y	Character	2		Skull Ossification	A=Almost complete, F=Full, G=Greater than 2/3, H=Half, L=Less than 1/3, T=Trace, 0=None	
CP	14	Y	Character	2		Cloacal Protuberance	0=None, S=Small, M=Medium, L=Large	
BP	15	Y	Character	2		Brood Patch	0=None, S=Smooth, V=Vascularized, W=Wrinkled, M=Molting	
Fat	16	Y	Character	2		Fat	0=None, T=Trace, L=Thin layer, H=Half, F=Full, B=Bulging, G=Greatly bulging, V=Very extensive	
BodyMolt	17	Y	Character	2		Body Molt	0=None, T=Trace, L=Light, M=Medium, H=Heavy	
FFMolt	18	Y	Character	2		Flight Feather Molt	N=None, S=Symmetrical, A=Adventitious	
FFWear	19	Y	Character	2		Flight Feather Wear	0=None, S=Slight, L=Light, M=Moderate, H=Heavy, X=Extreme	
JuvPlum	20	Y	Character	2		Juvenal Plumage	0=None, L=Less than 1/2, H=More than 1/2, F=Full	
MoltLim1	21	Y	Character	2		Molt Limit	0=None, A=Alula, B=Body, C=Primary Coverts, G=Greater Coverts, L=Lesser Coverts, M=Median Coverts, P=Primaries, R=Rectrices, S=Secondaries, T=Tertials, V=Primary vs. Greater Coverts	
MoltLim2	22	Y	Character	2		Molt Limit	Same as above	
Wing	23	Y	Numeric	Integer	0	Wing Chord		
Weight	24	Y	Numeric	Single	1	Weight		Integer

SOP #12: Data Entry (continued).

Field Name	Field	Required (Y/N)	Type	Length	Decimal	Definition	Enumerated Domain	Range Domain
Status	25	Y	Character	2		Bird Status	N=Banded and released okay, C=Color banded, D=Dead, I=Injured	
Month	26	Y	Character	2		Month		01 to 12
Day	27	Y	Character	2		Day		01 to 31
CapTime	28	Y	Character	4		Capture Time (24-hour)		0000 to 2359
Site	29	Y	Character	4		Banding Station (4-letter code for each station)		
Point	30	Y	Character	2		Net Number		01 to 13
NoteNum	31	N	Character	2		Note Number		01 to 25
OldBand	32	Y	Character	9		Old Band Number		
UpColor	2	N	Character	2		Upper Part Color	D=Dusky, G=Gray, B=Black, N=Brown, O=Olive, P=Pink, R=Green, W=White, Y=Yellow	
UndColor	3	N	Character	2		Under Part Color	D=Dusky, G=Gray, B=Black, N=Brown, O=Olive, P=Pink, R=Green, W=White, Y=Yellow	
ThrColor	4	N	Character	2		Throat Color	D=Dusky, G=Gray, B=Black, N=Brown, O=Olive, P=Pink, R=Green, W=White, Y=Yellow	
ChnColor	5	N	Character	2		Chin Color	D=Dusky, G=Gray, B=Black, N=Brown, O=Olive, P=Pink, R=Green, W=White, Y=Yellow	
LgColor1	6	N	Character	2		Leg Color	D=Dusky, G=Gray, B=Black, N=Brown, O=Olive, P=Pink, R=Green, W=White, Y=Yellow	

SOP #12: Data Entry (continued).

Field Name	Field	Required (Y/N)	Type	Length	Decimal	Definition	Enumerated Domain	Range Domain
LgColor2	7	N	Character	2		Leg Color	D=Dusky, G=Gray, B=Black, N=Brown, O=Olive, P=Pink, R=Green, W=White, Y=Yellow	
RngShp1	9	N	Character	2		Eye Ring Shape	A=Absent, B=Broken, C=Complete, D=Distinct, I=Indistinct, R=Round, T=Tear drop	
RngShp2	10	N	Character	2		Eye Ring Shape	A=Absent, B=Broken, C=Complete, D=Distinct, I=Indistinct, R=Round, T=Tear drop	
MandBase	11	N	Character	2		Mandible Base Color	D=Dusky, G=Gray, B=Black, N=Brown, O=Olive, P=Pink, R=Green, W=White, Y=Yellow	
MandTip	12	N	Character	2		Mandible Tip Color	D=Dusky, G=Gray, B=Black, N=Brown, O=Olive, P=Pink, R=Green, W=White, Y=Yellow	
Culmen	13	N	Numeric	Single	1	Length of culmen from nares (bill)		
BillWidt	14	N	Numeric	Single	1	Width of bill at nares		
LPPLSS	15	N	Numeric	Single	1	Longest primary - longest secondary		
LPP6	16	N	Numeric	Single	1	Longest primary - p6		
P6P10	17	N	Numeric	Single	1	P6 – p10		
P9P5	18	N	Numeric	Single	1	P9 – p5		
P10P5	19	N	Numeric	Single	1	P10 – p5		
P10P4	20	N	Character	2		P10 – p4	>, <, =	
P6Emarg	21	N	Character	2		P6 Emarginated?	Y=Yes, No=No	
Tail	22	N	Numeric	Integer	0	Tail length		
WingTail	23	N	Numeric	Integer	0	Wing Chord – Tail length		
R6R1	24	N	Numeric	Integer	0	Tip r6 – tip r1		

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Field Name	Field	Required (Y/N)	Type	Length	Decimal	Definition	Enumerated Domain	Range Domain
WebRect	25	N	Character	2		Outer web of rectrices	N=None, S=Slight=M=Moderate	
Clipped	2	N	Character	2		Clipped rectrix	R1, R2, R3, R4, R5, L1, L2, L3, L4, L5	
BillGrv	3	N	Numeric	Integer	0	Percent of bill length with grooves		Percent: 0 to 100
R2Emarg1	4	N	Character	2		R2 Emarginate: inner	0=None, S=Slight, M=Moderate	
R2Emarg2	5	N	Character	2		R2 Emarginate: outer	0=None, S=Slight, M=Moderate	
R5Width	6	N	Numeric	Single	1	R5 Width		

Dataset: VGXXYY

File Type: mdb

Relationships: Vegetation Data (one) to Species Composition Data (many)

Table: Vegetation Data

Field Name	Field	Required (Y/N)	Type	Length	Decimal	Definition	Enumerated Domain	Range Domain
RecNum	1	Y	Numeric	Integer	0	Auto Number based on order of entry; Key Field		Integer starting at 1, no limit
Region	2	Y	Character	20		Project Code		
Site	3	Y	Character	20		Site name (often 4-letter code)	Each 4-letter code represents itself	
Point	4	Y	Character	3		Reference number for each point count point within a site (route)		
Split	5	N	Character	2		Split indicates multiple releve surveys conducted for single point and designates the survey	A, B, N=North, S=South, E=East, W=West	

SOP #12: Data Entry (continued).

Field Name	Field	Required (Y/N)	Type	Length	Decimal	Definition	Enumerated Domain	Range Domain
PrimObs	6	Y	Character	4		Primary observer's initials		
Easting	7	Y	Numeric	Single	7	UTM Easting		
Northing	8	Y	Numeric	Single	7	UTM Northing		
Error	9	Y	Error	3	1	GPS Error		
Month	10	Y	Character	2		Month		
Day	11	Y	Character	2		Day		
Year	12	Y	Character	4		Year		
PltRad	13	Y	Numeric	Integer	0	Plot Radius		Integer, meters
Water	14	Y	Character	2		Water present	+=Yes, -=No	
Burned	15	Y	Character	2		Burned or Unburned	B=Burned, U=Unburned	
RipUp	16	Y	Character	2		Riparian or Upland	R=Riparian, U=Upland	
RipType	17	N	Character	2		Type of Riparian	W=Wetland, P=Pond, L=Lake, F=Flowing	
RipWidth	18	N	Character	2		Size of Riparian Area	1=less than 0.5 hectares, 2=between 0.5 and 4 ha 3=>4 ha	
SiteNotes	19	N	Character	255		Site Notes		
TRTOTCOV	2	Y	Character	2		Total Tree Cover	0=None, 1=numerous, but less than 5 percent cover, or scattered with cover up to 5 percent, 2=5 - 25 percent cover, 3=25 - 50 percent cover, 4=50 - 75 percent cover, 5=> 75 percent cover, R=Rare, solitary, with small cover, +=Few, with small cover	
TRLOWHT	3	Y	Numeric	Integer	0	Low Tree Height (meters)		
TRLOWSP	4	Y	Character	4		Low Tree Species	4-letter plant species codes	
TRUPPHT	5	Y	Numeric	Integer	0	Upper Tree Height (meters)		
TRUPPSP	6	Y	Character	4		Upper Tree Species	4-letter plant species codes	

SOP #12: Data Entry (continued).

Field Name	Field	Required (Y/N)	Type	Length	Decimal	Definition	Enumerated Domain	Range Domain
TRMINDBH	7	Y	Numeric	Integer	0	Minimum Tree Diameter at breast height (centimeters)		
TRMINSP	8	Y	Character	4		Minimum Tree Species	4-letter plant species codes	
TRMAXDBH	9	Y	Numeric	Integer	0	Maximum Tree Diameter at breast height (centimeters)		
TRMAXSP	10	Y	Character	4		Maximum Tree Species	4-letter plant species codes	
TRNUMSUB	11	Y	Character	2		Number of Tree Sublayers		Range 0 to 3
SHTOTCOV	12	Y	Character	2		Total Shrub Cover	0=None, 1=numerous, but less than 5 percent cover, or scattered with cover up to 5 percent, 2=5 - 25 percent cover, 3=25 - 50 percent cover, 4=50 - 75 percent cover, 5=> 75 percent cover, R=Rare, solitary, with small cover, +=Few, with small cover	
SHLOWHT	13	Y	Numeric	Single	1	Low Shrub Height (meters)		
SHLOWSP	14	Y	Character	4		Low Shrub Species	4-letter plant species codes	
SHUPPHT	15	Y	Numeric	Single	1	Upper Shrub Height (meters)		
SHUPPSP	16	Y	Character	4		Upper Shrub Species	4-letter plant species codes	
SHNUMSU	17	Y	Character			Number of Shrub Sublayers		Range 0 to 3

SOP #12: Data Entry (continued).

Field Name	Field	Required (Y/N)	Type	Length	Decimal	Definition	Enumerated Domain	Range Domain
HBTOTCOV	18	Y	Character			Total Herb Cover	0=None, 1=numerous, but less than 5 percent cover, or scattered with cover up to 5 percent, 2=5 - 25 percent cover, 3=25 - 50 percent cover, 4=50 - 75 percent cover, 5=> 75 percent cover, R=Rare, solitary, with small cover, +=Few, with small cover	
MSTOTCOV	19	Y	Character			Total Moss Cover	0=None, 1=numerous, but less than 5 percent cover, or scattered with cover up to 5 percent, 2=5 - 25 percent cover, 3=25 - 50 percent cover, 4=50 - 75 percent cover, 5=> 75 percent cover, R=Rare, solitary, with small cover, +=Few, with small cover	
Snag1	20	Y	Numeric	Integer	0	Total snags < 14.9 cm		
Snag2	21	Y	Numeric	Integer	0	Total snags 15-27.9 cm		
Snag3	22	Y	Numeric	Integer	0	Total snags 28-63.9 cm		
Snag4	23	Y	Numeric	Integer	0	Total snags 64-101.9 cm		
Snag5	24	Y	Numeric	Integer	0	Total snags >102 cm		
VegNotes	25	Y	Character	255		Vegetation Notes		

SOP #12: Data Entry (continued).

Table: Species Composition Data

Field Name	Field	Required (Y/N)	Type	Length	Decimal	Definition	Enumerated Domain	Range Domain
RecNum	1	Y	Numeric	Integer	0	Auto Number based on order of entry; Key Field		Integer starting at 1, no limit
Species	3	N	Character	4		Plant Species	4-letter plant species codes	
T1	2	N	Character	2		Tree Sublayer 1	0=None, 1=numerous, but less than 5 percent cover, or scattered with cover up to 5 percent, 2=5 - 25 percent cover, 3=25 - 50 percent cover, 4=50 - 75 percent cover, 5=> 75 percent cover, R=Rare, solitary, with small cover, +=Few, with small cover	
T2	2	N	Character	2		Tree Sublayer 1	0=None, 1=numerous, but less than 5 percent cover, or scattered with cover up to 5 percent, 2=5 - 25 percent cover, 3=25 - 50 percent cover, 4=50 - 75 percent cover, 5=> 75 percent cover, R=Rare, solitary, with small cover, +=Few, with small cover	

SOP #12: Data Entry (continued).

Field Name	Field	Required (Y/N)	Type	Length	Decimal	Definition	Enumerated Domain	Range Domain
T3	2	N	Character	2		Tree Sublayer 1	0=None, 1=numerous, but less than 5 percent cover, or scattered with cover up to 5 percent, 2=5 - 25 percent cover, 3=25 - 50 percent cover, 4=50 - 75 percent cover, 5=> 75 percent cover, R=Rare, solitary, with small cover, +=Few, with small cover	
T4	2	N	Character	2		Tree Sublayer 1	0=None, 1=numerous, but less than 5 percent cover, or scattered with cover up to 5 percent, 2=5 - 25 percent cover, 3=25 - 50 percent cover, 4=50 - 75 percent cover, 5=> 75 percent cover, R=Rare, solitary, with small cover, +=Few, with small cover	
T5	2	N	Character	2		Tree Sublayer 1	0=None, 1=numerous, but less than 5 percent cover, or scattered with cover up to 5 percent, 2=5 - 25 percent cover, 3=25 - 50 percent cover, 4=50 - 75 percent cover, 5=> 75 percent cover, R=Rare, solitary, with small cover, +=Few, with small cover	

SOP #12: Data Entry (continued).

Field Name	Field	Required (Y/N)	Type	Length	Decimal	Definition	Enumerated Domain	Range Domain
T6	2	N	Character	2		Tree Sublayer 1	0=None, 1=numerous, but less than 5 percent cover, or scattered with cover up to 5 percent, 2=5 - 25 percent cover, 3=25 - 50 percent cover, 4=50 - 75 percent cover, 5=> 75 percent cover, R=Rare, solitary, with small cover, +=Few, with small cover	
S1	2	N	Character	2		Shrub Sublayer 1	0=None, 1=numerous, but less than 5 percent cover, or scattered with cover up to 5 percent, 2=5 - 25 percent cover, 3=25 - 50 percent cover, 4=50 - 75 percent cover, 5=> 75 percent cover, R=Rare, solitary, with small cover, +=Few, with small cover	
S2	2	N	Character	2		Shrub Sublayer 1	0=None, 1=numerous, but less than 5 percent cover, or scattered with cover up to 5 percent, 2=5 - 25 percent cover, 3=25 - 50 percent cover, 4=50 - 75 percent cover, 5=> 75 percent cover, R=Rare, solitary, with small cover, +=Few, with small cover	

SOP #12: Data Entry (continued).

Field Name	Field	Required (Y/N)	Type	Length	Decimal	Definition	Enumerated Domain	Range Domain
S3	2	N	Character	2		Shrub Sublayer 1	0=None, 1=numerous, but less than 5 percent cover, or scattered with cover up to 5 percent, 2=5 - 25 percent cover, 3=25 - 50 percent cover, 4=50 - 75 percent cover, 5=> 75 percent cover, R=Rare, solitary, with small cover, +=Few, with small cover	
S4	2	N	Character	2		Shrub Sublayer 1	0=None, 1=numerous, but less than 5 percent cover, or scattered with cover up to 5 percent, 2=5 - 25 percent cover, 3=25 - 50 percent cover, 4=50 - 75 percent cover, 5=> 75 percent cover, R=Rare, solitary, with small cover, +=Few, with small cover	
S5	2	N	Character	2		Shrub Sublayer 1	0=None, 1=numerous, but less than 5 percent cover, or scattered with cover up to 5 percent, 2=5 - 25 percent cover, 3=25 - 50 percent cover, 4=50 - 75 percent cover, 5=> 75 percent cover, R=Rare, solitary, with small cover, +=Few, with small cover	

SOP #12: Data Entry (continued).

Field Name	Field	Required (Y/N)	Type	Length	Decimal	Definition	Enumerated Domain	Range Domain
S6	2	N	Character	2		Shrub Sublayer 1	0=None, 1=numerous, but less than 5 percent cover, or scattered with cover up to 5 percent, 2=5 - 25 percent cover, 3=25 - 50 percent cover, 4=50 - 75 percent cover, 5=> 75 percent cover, R=Rare, solitary, with small cover, +=Few, with small cover	
H1	2	N	Character	2		Herb Sublayer 1	0=None, 1=numerous, but less than 5 percent cover, or scattered with cover up to 5 percent, 2=5 - 25 percent cover, 3=25 - 50 percent cover, 4=50 - 75 percent cover, 5=> 75 percent cover, R=Rare, solitary, with small cover, +=Few, with small cover	
H2	2	N	Character	2		Herb Sublayer 2	0=None, 1=numerous, but less than 5 percent cover, or scattered with cover up to 5 percent, 2=5 - 25 percent cover, 3=25 - 50 percent cover, 4=50 - 75 percent cover, 5=> 75 percent cover, R=Rare, solitary, with small cover, +=Few, with small cover	

SOP #12: Data Entry (continued).

Field Name	Field	Required (Y/N)	Type	Length	Decimal	Definition	Enumerated Domain	Range Domain
M1	2	N	Character	2		Moss Sublayer 1	0=None, 1=numerous, but less than 5 percent cover, or scattered with cover up to 5 percent, 2=5 - 25 percent cover, 3=25 - 50 percent cover, 4=50 - 75 percent cover, 5=> 75 percent cover, R=Rare, solitary, with small cover, +=Few, with small cover	
M2	2	N	Character	2		Moss Sublayer 1	0=None, 1=numerous, but less than 5 percent cover, or scattered with cover up to 5 percent, 2=5 - 25 percent cover, 3=25 - 50 percent cover, 4=50 - 75 percent cover, 5=> 75 percent cover, R=Rare, solitary, with small cover, +=Few, with small cover	

Note: Two codes can be used in all fields except RECNUM to indicate either an error on datasheet (-8) or no data collected (-9). All categorical.